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grand a feature in the country, particularly those at the head of Bute Inlet. The largest glacier was ten miles long and three-quarters of a mile across. The terminal *moraines* were very strongly marked. He (Mr. Whympere) had a very vivid recollection of that visit, having narrowly escaped the fate that befel the larger part of the road party, who were murdered by the Indians but two days after he had left them. His guide, an old Chilicoten chief, was subsequently hung for his share in that terrible massacre.

Mr. WADDINGTON, in reply to the statement of Dr. Rae with regard to the Saskatchewan, said he held in his hand a printed report from Mr. Alfred Perry, a well-known and reliable traveller. It was dated June 6th, 1861, and was to the effect that the Saskatchewan was available for steam-navigation. It stated, moreover, that from the "Rapide des Fourneaux," eight miles below the Yellow Head C  che down to the mouth of the Quesnelle, the Upper Fraser was navigable for steamboats; that the river was not less than six feet deep in the shallowest parts, and the current slow, more like a lake than a river. He had also the opinion of Sir James Douglas with regard to the Upper Fraser. There were four rapids. The worst was the *Grande Rapide*, above the mouth of the Quesnelle; and Sir James Douglas said he was convinced it was not so bad a rapid as the Emory Rapid below Fort Yale, which had been considered impracticable for several years, but was now steamed over daily. If necessary, he could take his railroad 19 miles higher up the plain, and thus avoid this rapid.

Dr. R   said that, at the time of year he was there, the water in the river was so low that no steamer could navigate it.

Mr. WADDINGTON added, he had talked the matter over more than once with Mr. Brewster, his deceased foreman, who had been over the route, and that gentleman assured him that a steamer could get through at any time.

The PRESIDENT wished to make one observation in conclusion, and that was to repeat what he had said at the commencement of the discussion, namely, that the essential part of the paper was the geographical portion, describing the new route Mr. Waddington had explored from the Bute Inlet, with a view to a railroad connection between our colonies on the Pacific and Canada. If that railroad were ever made, to Mr. Waddington would belong the credit of having pointed out the most practicable and easy line for the purpose.

ADDITIONAL NOTICES.

(Printed by order of Council.)

1. *Additional Notes on the Geography of Southern Peru.* By WILLIAM BOLLAERT, Esq., F.R.G.S., &c.

IN Volume XXI. of the 'Journal of the Royal Geographical Society' will be found my first paper "On Southern Peru, with Survey of the Province of Tarapac  ," by my friend Mr. George Smith, F.R.G.S., and myself, in 1827, but brought down to the date of publication, viz., 1851.

Since then, I have again visited Peru, and explored more particularly the southern portion, which has become an interesting commercial locality, in consequence of the working of the vast deposits of nitrate of soda, and the discovery of the valuable borate of soda and lime; and I have brought the additions to the Map of the Province of Tarapac   up to 1866.

The nitrate of soda is a well-known fertiliser, extensively used in the arts,

also in the manufacture of gunpowder. In 1820 samples of refined nitrate were sent to Europe; in 1830 a few tons. Its export then went on increasing, when last year it amounted to 125,000 tons. The nitrate contains a large quantity of iodine, and experiments are in progress for economically separating this valuable substance. Bromine also exists in the nitrate.

The Peruvian province of Tarapacá, in the department of Moquegua, is bounded on the north by that of Arica, on the east and south by the Republic of Bolivia, and on the west by the Pacific Ocean; a rainless desert region.

The Quebrada, or ravine of Camarones, in the north, in $19^{\circ} 12' 30''$ s., is generally considered the boundary with Arica; but the people of Tarapacá say their boundary is a few miles further north. In the south the River Loa, in $21^{\circ} 28'$ s., is the boundary with Bolivia; and in a MS. Report,* in my possession, of 1628, the first boundary pile of stones is placed at the mouth of the River Loa.† When on the survey of the province in 1827, our guides told us that the mountain of Cancoso, about $68^{\circ} 15'$ w., was on the eastern boundary.

The population of the province is from 19,000 to 20,000, composed of Peruvians, some Chilenos, foreigners, and Indians of the Aymará family, the latter wholly employed in taking provisions on mules and asses from the interior to the Oficinas or Nitrate Works, then conveying the refined nitrate to the coast for shipment, returning with Chile (and even English coal) and provisions to the Nitrate Works, of which there are about 100, giving employment to nearly the whole population.

The principal points of embarkation of the nitrate are Iquique, Mejillones, Pisagua, Junin, Molle, Chucamata, and Patillos. Huano is taken from Huanillos, Pabellon, P. de Lobos, and Puerto Ingles.

There are three ravines that cut through the province from east to west, or from the Cordilleras to the sea, having long desert tracks between them. Are these entirely water-worn ravines, or have they been partially formed by earthquake fissures? In some of these, particularly in that of Pisagua, there are very deep, narrow, and perpendicular clefts, known as *Mal Pasos*, not to be traversed. That of Camarones in the north, into which run the smaller ones of Chisa and Liga. That of Pisagua, with brackish water, I have traced up to the dividing ridge or pass of Pichuta, 14,300 feet above sea-level; the generally dry ravine of Tiliviche enters that of Pisagua at the western edge of the extensive table-land or Pampa de Tamarugal. That of the Loa has a saline river.

There is a second set of ravines also rising in the Cordilleras, their waters generally saline, which flow into the Pampa de Tamarugal.

Also a third, including numberless dry ravines; however, when heavy rains occur in the Cordilleras, a small portion of water would be conducted by these into the Pampa.

The region in which these ravines rise is composed of huge mountain-chains, sometimes called the Cordillera of the Coast, some of the peaks over 22,000 feet, and one—the Lirima—is probably over 23,000 feet above sea-level; with apachetas—piles of stone in passes—abras, or passes, from 13,000 to over 15,000 feet; one, that of Puspucâne near the Lirima Peak, I am informed by Mr. Williamson, is 16,146 feet.

Within the Cordilleras are hollows and plains, at 12,000 to 14,000 feet, their central parts being either marshes or lakes, some of the latter containing three or four sorts of small fish. These lakes do not appear to have outlets, their waters being kept on a level by percolation and evaporation,

* Contained in 'Memoria de la S. Iglesia de Arequipa par El Arcediano F. J. de Acheveria,' 1810.

† In Ondarza's Map of Bolivia the boundary comes down to Chuicchuic on the Loa; I only take it up to Quilliagua.

Having surmounted these passes, say in the north, the descent is to the great Andean table-land, and about east from the volcano of Isluga is the south end of the great Lake Aullagas.* To the south and east of the copper-mines of Yabricoya,† and having surmounted the passes in the Cordilleras of Silillica, and as high as 15,422 feet, there are salt plains and salt lakes, one 60 miles across, to the east of which are other great mountain-chains, sometimes called the Andes, with the Illimani, 24,155 feet, and the Illampu, 24,812 feet. Above Huatacondo, in the province of Tarapacá, are many high passes, that of Remedios 14,450 feet.

The city of Iquique was declared to be the capital of the province in 1866. Fitzroy in 1833 gave for the latitude $20^{\circ} 12' 30''$ s., $70^{\circ} 13' 30''$ w. (the old church). Gillis and Mösta's more recent observations for the longitude of Valparaiso would go to show that the whole coast of the Pacific is about 4' too far to the west, as placed on Fitzroy's admirable chart. Now if 4' be subtracted from Fitzroy's longitude of Iquique, we shall have the corrected longitude of $70^{\circ} 9' 30''$.‡

Iquique with this new branch of industry, the nitrate of soda trade, from the smallest of fishing-villages, has now a resident population of over 5000. The streets are lined with well-built houses; there are several moles, a lighthouse, two churches, hospital, theatre, club, newspaper, and the place is lit with gas; indeed, all the comforts of life are had at this barren spot where there is neither vegetation nor water; the last most necessary article is distilled from that of the ocean. Some of the silver ores of Huantajaya are amalgamated here with seawater.

Another great sign of progress is the construction of a railway from Iquique to La Noria, 33 miles in length, a great centre of the nitrate refiners, which, when finished, will diminish the wear and tear of 15,000 horses, mules, and asses, employed in taking fuel, provisions, &c., to the interior, and bringing down refined nitrate.

Some observations on this line surveyed by Mr. Pickering, as well as another projected across the Cordillera into Bolivia, by Herr Reck, will give an idea of the great elevation of the country above the level of the sea.

The Iquique and Noria line commences at the former place to the base of the coast-range, then by a long and sandy ascent of 10 miles, near to the upper part of Molle, 1761 feet. The line then curves round the mountain of Santa Rosa to the Noria, 3277 feet. Now begins the line into Bolivia by the town of Tirana, in the Pampa of Tamarugal, 3332 feet; Pica, at the base of the Cordillera, 4483 feet; then over the north end of the Serrania of Huatacondo, by a pass 12,942 feet; along the Pampa of Chacarilla, 12,660 feet, by the north end of the Cordillera of Silillica, thence to Garita, 12,296 feet. There are peaks 5000 feet above the more elevated passes; one of the latter in this direction, east of the Pampa of Huasco, is 15,422 feet. The descent is now to the great table-land, where in the east and north-east is the Cordillera Real, containing, among other giants of the Andes, Illimani and Illampu. Skirting the north side of the Pampa of Impejsa to Sicsigua, 12,431, to Canquella, 12,155,

* Dalence, 'Geografia de Bolivia,' p. 30, calls this the mysterious Lake of Pampa Aullagas (or Poopo-Choro), with many inlets, but no outlets, and always at same level. It is thought there is an underground communication on the coast of Tarapacá, and it was reported at the commencement of the last century that fragments of floats of rushes as used on the lake were found on the coast near Iquique. I may observe that, considering the great elevation of the lake, 12,136 feet, with the powerful evaporation that takes place, caused by the rarefied state of the atmosphere, and percolation, is sufficient to keep the lake on a general level.

† See 'Mapa de Bolivia 1869, proyecto del Ferro-carril á la Costa par Hugo Reck.' Wyld, London. Private distribution, with a pamphlet.

‡ 'Geogr. Soc. Journal,' 1858; 'S. American Pilot,' King and Fitzroy, 5th edit., Part II. p. 437.

Isuaya, 12,165, through the salt lake and marsh of Coipasa, 12,136, to the River Laga-ahuira, through the Lake of Pampa Aullagas, 12,136, the River Desaguadero to Lake Titicaca, 12,601, whence the Peruvian frontier city of Puno, 12,630, and La Paz, the capital of Bolivia, 12,226 feet above sea-level, are easily reached.

We will now return to the coast. The mean summer heat, in the shade, at Iquique :—8 A.M., 72°; noon, 78°; 8 P.M., 84°. Mean winter heat :—8 A.M., 63°; noon, 67°; 8 P.M., 62°. These low temperatures in 20° s. lat. are owing to the following causes :—

1st. The continuous south cold current (Humboldt's) running along the coast of the Pacific, of from 12 to 18 miles in the 24 hours.

2nd. The winds are mostly from the cool south.

3rd. At night, during the greater portion of the year, the terral, or land breeze from the Andes, is always cool.

4th. There is cloudy weather in the winter months, with north and north-west winds and thick mists, and rarely a slight drizzle or *garua*. The barometer is very steady in this portion of the Pacific.

When I first knew Iquique in 1826, there was seldom more than a hundred people there, and it was very healthy; but at Pica and Tarapacá, in the interior, at over 4000 feet above sea-level, and where there is water and vegetation, malaria was generated, giving rise to terciana or ague; at 6000 feet fever disappeared.

For some years past, about the month of June, this spot is visited by *peste*, of a bad bilious and yellow fever character, thought by some to be brought by the steamers from Panamá; however, others believe this *peste* is engendered on the spot. There is now a considerable population, the soil is sandy, and there is no drainage, to which must be added the ordure of thousands of animals that bring the nitrate from the refineries; then a hot sun on the soil-impregnated ground are sufficient causes for this, at times, fatal visitation of *peste*. Some idea of the great number of horses, mules, and asses that die at Iquique may be formed from the heaps of skeletons seen.

During the winter the gigantic cactus, 30 to 40 feet in height, and 10 to 15 feet at the base, thrives on the Lomas or summits of the mountains of the coast. I found the following live *Bulmi* on these plants: *B. virgulatus*, *B. erosus* and *Succinea broderipii*; and at the roots of the plant heaps of their dead shells.

A few bulbous and other plants appear at this season—the *Tiempo de Flores*—for the inhabitants of these dreary desert shores, who ascend to the Lomas to pic-nic and gather flowers, especially of blue and white lilies, and an oxalis of which a salad is made. When the drizzles have been plentiful, a very little pasture makes its appearance; then the Indian donkey-drivers take their animals up to the Lomas to nibble at fresh fodder.

Occasionally a stray huanaco and a fox may be met with; the mighty condor is seen hovering about, and the little slate-coloured bird the *Come sebo*, or Tallow-eater.

The following are the names of some of the plants I collected on my last visit,* kindly examined and named by Mr. Miers :—*Cleome chilensis* var. *pubescens*, *Talinum*, *Bryonia convolvifolia*, *Argylia feullei*, *Gilia* (?), *convolvulus*, *verbena*, *Lycium fragosum*, *Nolana atriplicifolia*, *Dolia vermiculata*, *Tetersena amæna*, *Sisyrinchium* (?), *Leucocoryne ixiodes*, *Notholæna remota*, *Usnea*, *Oxalis*, *Peperomia*, *Chenopodiaceæ*.

A severe earthquake shock is expected about every six or seven years, and felt all over the province. In 1795 as many as forty shocks were felt in one day. In 1818 a series were felt for fifteen days. The terrible terremotos of

* I presented those of my first to the late Mr. Lambert, which are now in the British Museum.

18th September, 1833, already alluded to, which destroyed Taena, had here the effect of calming the sea and dispersing the clouds.

I was at Macaya at 6270 feet, 2nd Feb., 1854. At 9 A.M., a rumbling noise was heard as if from the depths of the Andes, and then the shock of ten seconds; this was felt at Tirana in the Pampa of Tamarugal.

March 10th, 1854.—Being in the town of Tarapaca, 4210 feet, at the base of the Andes, I experienced a series of heavy shocks, commencing at 5.27 P.M., continuing at intervals for seven minutes. A revolution had broken out, volleys of musketry firing, people being killed and wounded whilst the shocks were going on. I sought shelter in the house of a friend; candles were burning before a crucifix, my friend's sister was kneeling and prayed before it, "O Lord God the Saviour! See, see Christ is angry at what is going on! Save us, Lord, save us!" This is known as the *Batalla del Temblor*. On the 4th April following I was at Iquique, when there was another fatal political fight, headed by one named Legay, this is called the *Batalla de los Asesinos*.

From my note-book, 1854:—

August 25th, 6 A.M., at Iquique.—Slight noise, a push, then a smart shock. 26th, 2.30 A.M.—Shock with pushing motion, which awoke me. Had there been another moment, I should have jumped up and made for the open pampa. 30th, 12.15 P.M.—Sharp shock. *September* 27th, at La Noriá, 4.30 P.M.—Sharp shock was felt at La Tirana same time. 28th, at La Tirana.—Sharp shock 9 P.M. *October* 9th.—At Iquique, 8.30 P.M.—Smart little earthquake from the land side. 19th, noon.—Sharp shock (felt same time at La Tirana); people flew out of their houses to the open ground, screaming "Miserecordia!" (About this period a volcano had burst out north of Copiapo, and the smoke of it seen from the port of Caldera). 23rd, noon.—Slight shock. 29th, 6 A.M.—Long and heavy shock; the rush of a long wave on the shore was heard, which was attributed to it.

Leaving the porphyritic rocks north of the town of Iquique, the shore of the Anselo pampa is reached, where there is a slightly elevated sandy ridge. Behind is a depression into which sea-water filters; this, mixing with dead shells there, of *Concholepas*, *Trochus*, *Mytilus*, *Venus*, *Mesodesma*, *Chitons*, *Balanas*, &c., decomposition of sea-water and shells takes place, when one of the products is a large quantity of a well-crystallised salt, principally a sulphate of lime. This spot is the narrow edge of an extensive shelly plain of elevation (not being uncommon on these coasts), which sweeps round Iquique going some distance inland. This great deposit of dead shells is called *Conchuelo*, and near the sea the shells are pretty perfect, but inland broken and in powder. In places they are 10 feet thick, and are burnt into lime for building purposes. It may be observed that very few shells are thrown up on this part of the coast at the present time.

From the Anselo rocks round to P. Piedra the whole distance is high, rocky, and escarped, in places over 2000 feet above the sea-level. Mr. David Forbes, F.R.S., tells me that what I have called granite here is diorite. There is a break in the Mountains of Guantaca, and here the diorite is seen in conjunction with the porphyry; the Cacti only grow on the crumbling diorite, and not on the hard porphyry.

The Island of Iquique, formerly thickly covered with Huano, is of porphyry, and appears to have been at one time a collection of rocks, the channels now filled up with broken shells, and there is a shelly elevation from 20 to 30 feet thick. The island is covered with rounded stones—may this not show that elevation is going on?

Six miles south-east from Iquique is Molle, a shipping-port for nitrate. The route to it is over the shelly plain, through sand-hills, to a more elevated shelly plain, having shelly cliffs at the port of Molle over 50 feet in height. There is no water except that of the sea, yet I observed abundance of flies,

mosquitoes, vinchuctas, lizards, rats, mice, scorpions, centipedes, and large fleas. The Sargasso, a gigantic sea-weed, is in great abundance.

The porphyritic coast of Molle is very steep, much of its lower portion deeply covered with disintegrated rock. In August, 1853, half a league from Mejillones ($19^{\circ} 15' \text{S.}$), there was a great fall of disintegrated rock from the upper part of the mountain into the sea; this lasted several days, the noise was heard at Mejillones and clouds of dust seen in the air. In this fall of loose rock, bones of whales and other marine animals were found, some as high as 50 feet above sea-level.

Of the several excursions I made up into the mountains of the coast, I will particularize the exploration of the Morro of Tarapacá, its summit at least 6000 feet above sea-level. I was accompanied from Molle by my friend Dr. Bokenham. We journeyed on horseback to P. Grande early in the morning, ascending along the base of the mountain to a slope progressing zigzag upwards, and a hard pull-up it was, when we came upon an extensive, undulating, broken, sandy desert tract at least 3500 feet, the summit of the Morro being still more than 3 leagues off, which we did not feel inclined to go to, it being long past noon. Whilst resting we had a good look at this most desolate of scenes. Leading our horses we descended diagonally to the left a very steep portion of the Morro in the direction of the upper part of Molle. Scrambling up and down, our progress was often abruptly stopped by approaching the escarped sides of the coast. Bearing now to the right, descending very steep places, our course became unsafe, for, had we slipped, where we should have rolled to it is difficult to say. Here my companion's horse got away, when he followed it. I continued the descent, plunging repeatedly into deep loose stuff, and suffocated with the finer portions. At last I got to the bottom, when I saw my companion, but without his horse. The animal, I learnt, had got on a *Barranca*, or rocky ledge, and was a fixture. The following morning a *Vaqueano*, or good guide, managed to extricate the animal.

This mighty mass of a mountain, the Morro Grande of Tarapacá, appears to be entirely composed of red porphyry—say over 6000 feet thick.

Elevations above the Level of the Sea in the Province of Tarapacá, by Mr. George Smith in 1853, by Aneroid.

	Aneroid.	Feet.
Iquique	29'83	
Foot of Cuesta or zigzag		880
Summit of ditto		1,667
Meeting of roads to Molle		2,089
Top of a Cuesta		2,475
Road to Molle		2,385
End of Encañada—Noriá road leading to S. Rosa		3,045
Aguada de la Sal, Piedra Grande		2,830
Pintados, Alto de la Aguada del Sal		3,261
Alto del Meadero		3,303
La Noria, Nitrate Works at the Salar, the latitude of the Maquina $20^{\circ} 25' \text{S.}$		3,277

Section from Pisagua, across the Mountains of the Coasts to the Northern Nitrate Works. By Mr. Cunningham, 1854, by Aneroid.

	Feet.
Port of Pisagua. 100 feet above sea-level the Aneroid stood at 29'0023.	
Brow of hill	1,660
First height in road	2,651
Hollow in road	2,372
Second height	2,997

Section from Pisagua—continued.

	Fect.
Second hollow	2,966
Third height	3,824
Third height, furthest point	4,984
Oficina Martinez (Sal de Obispo)	3,603
Oficina Tres Clavos	3,505
Sal de Obispo	3,505
Oficina Sal de Obispo	3,568
Oficinas of Rosario	3,784
Zapiga	3,721
Tiliviche stream	3,392
Top of ravine	3,656
Tana stream	3,132
Tana, N. bank	3,618
Pozo de los Salitres	3,500
Pozo de los Caliches	3,600
Brow of bank below Tana	3,556
Tana, lower down ravine	3,132
House at Tana	2,900
Point in plain of Zapiga	3,423
Stream at Quifina	3,527
Junction of Tana and Tiliviche streams	1,995
Junction of Pisagua and Zapiga ravine	1,042
Chacra of Saya, two leagues from Pisagua	726

Elevations from Mr. Smith's Survey of the Nitrate Grounds, 1856, by Aneroid.

	Fect.
Ravine of Quifina, near Guacucano Caliches	2,703
Cuesta of Huaina Pisagua	1,175
Cuesta on road	2,560
Ditto	2,877
Ditto	3,545
Junction of two roads	3,971
Burro Muerto, junction of two roads	3,753
Osorio Caliches (Sal de Obispo)	3,566
Zabala, I. M., Caliches	3,649
Tiliviche, Borate	3,273
Junin, heights on the coast	2,079
Cuesta above Conca, on the coast	1,765
Junction of roads	2,754
Heights of Cachasa, on the coast	2,480
Mejillones, on the coast	3,140
Cano y Obiedo, Caliches	3,547
La Carolina, Caliches (Sal de Obispo)	3,734
South of Mejillones, on road	635
Ditto Cuesta	2,540
Ditto Ditto	3,320
Mina, meeting of four roads	3,263
Another meeting of roads	3,613
Pampa de Orcoma	3,863
Ditto	3,340
Oyada, Caliches	3,566
Agua Santa, Oficina	3,502
Vernal, J., Ditto	3,566
Negrosos, Ditto	3,612
Cuesta above P. Colorada	1,598
Pozo de Guara, Borate	3,517
Ramirez, Caliches	3,536
Yluga, entrance to Valley of Tarapacá	3,640
Town of Tarapacá	4,210

Elevations from Mr. Smith's Survey of the Nitrate Grounds, 1856—continued.

	Feet.
Iquique, top of Cuesta	1,667
Huantajaya Silver-mines, Town	2,877
Peña Abajo, W. side of P. Tamarugal	3,442
Molle, heights of	1,761
La Cruz, a cross on the road	2,368
Encañada, a ravine	3,045
Sebastopol, Oficina	3,291
La Noriá and Salar, Oficinas	3,277
Concepcion, S.E. of Noriá	3,673
La Calera, E. of Pampa	4,505
Matilla, town of, E. of Pampa	3,913
Salar Soronal, Caliches	2,593
Pan de Azucar, Caliches	3,223
Bella Vista, Caliches	3,280

Elevations taken by Mr. Williamson in 1859.

	Feet.
Town of Tarapacá	4,796
Pica	4,290
Mamiña	5,980
Macaya	6,270
Zipisa	10,250
Sotoca	10,351
Coscaya	9,075
Chiapa	10,542
Parina-cocha, Lake	13,576
Mauque	14,342
Turima	14,178
Apacheta de Huascan (pile of stones)	14,430
Springs of Río Pasirugo	14,079
Apacheta of Pusupucane or Chuncura	14,146
Lakes of Chuncura	15,448
Estancia of Colchani	13,956
La Rinconada	13,685
Estancia of Piga	13,784
Yabricoya, Mt.	W. B. 18,000
Ditto the Ingenio	10,423
Mt. of Cuyacagua	14,364
Mt. of Lagunilla	14,470
Lakes of Huasco	12,350

Elevations by Boiling-point of Water, taken in 1863 by David Forbes, F.R.S.

	Feet.
Hospicio de Colon, top of Cuesta of Iquique	1,284
Huantajaya Mines, La Fuente's House	2,726
La Noriá Works	3,052
Quebrada de Pasos	3,146
La Tirana	3,332
Cancha de Montel (Chacra sin Riego)	3,209
Peña abajo	3,679
Ramirez, highest Oficina	4,205
Osorio Oficina	3,814
La Carolina Oficina	3,734
Highest point on road to Pisagua, beyond Burro Muerto	3,971

Latitudes and Longitudes observed by Mr. George Smith in 1826-7.

Port of Iquique, centre of island	20	12	30	S.	70	14	30	W.
Huantajaya	20	14	0	..	70	7	0	
Matilla	20	31	22	
Pica, church	20	30	8	..	69	24	0	
Huatacondo	20	57	51	..	69	0	3	
Mamiña	20	4	48	..	69	13	0	
Tarapacá, Town ..	19	56	0	..	69	35	0	
Zipisa	19	36	6	..	69	16	30	
Sotoca	19	36	18	..	69	15	30	
Chiapa	19	32	19	..	69	13	0	
Sibaya	19	47	33	..	69	9	0	
Pisagua, Pichalo Pt.	19	36	30	..	70	9	0	
Camina	19	17	9	..	69	18	0	
Loa	21	28	0	..	70	6	15	
Maní	21	10	0	..	69	14	0	
Tirana	20	21	27	..	69	43	30	
La Noriá, the Maquina, 1854	20	22	0	..	69	54	30	

2. *Remarks of M. LUCIEN DE PUYDT on the Discussion at the Evening Meeting of 13th January, in a Letter to the President.*

To SIR R. MURCHISON, Bart., *President of the Royal Geographical Society, London.*

SIR,

41, Rue de Douai, Paris, 21st February, 1868.

I received a few days ago the "Slip of Meeting" of the Royal Geographical Society for the 13th January, 1868, and I cannot thank you enough for the interest you have shown in my labours in the Isthmus of Darien.

But there is a point of the highest importance to which I must call your attention and that of the Society, as it seriously affects the possibility of cutting a ship-canal across the Isthmus of Darien. This is an erroneous statement, though evidently loyal and sincere, made by Captain Bedford Pim, against which it is my duty to protest.

I read in the slip:—

"Captain BEDFORD PIM. It was not his intention to enter into any criticism upon the exploration, because there was a practical difficulty in carrying out the canal scheme across that part of the Isthmus of Darien, which he thought was insurmountable. By the Panama Railway Concession, which has just been passed, dated the 16th of August, 1867, reforming the Contract of April 15th, 1850, the Government of New Granada had bound itself not to construct, or to concede to any person or company the right to construct, a railway or an oceanic canal in the territory to the westward of a line drawn from Point Escoces on the Atlantic to Point Garachine on the Pacific, which would include the Pacific terminus of M. de Puydt. So that, without the permission of the Panama Railway Company, it was impossible for any one to make a canal, even supposing," &c., &c.

In all this there is a profound mistake, not in the fact itself, but in the inferences drawn from it.

The following is an extract from the text of the Contract passed the 16th August, 1867, as printed in the 'Diario Oficial' of Bogotá:—

"El Gobierno no podrá comprender por sí, ni permitir que persona alguna comprenda sin acuerdo i consentimiento de dicha Compañía (Panama Railway